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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,438	06/03/2005	Yoshinari Koyama	273255US0PCT	3230
22850 7590 05/27/2008 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER KUGEL, TIMOTHY J				
ART UNIT 1796		PAPER NUMBER		
NOTIFICATION DATE 05/27/2008		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/537,438

Applicant(s)

KOYAMA ET AL.

Examiner

Timothy J. Kugel

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
4a) Of the above claim(s) 2, 4-9 and 11-26 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1, 3 and 10 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☒ Claim(s) 1-26 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-856)
Paper No(s)/Mail Date See Continuation Sheet
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

Continuation of Attachment(s) 3. Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :06/03/2005,09/02/2005,02/23/2006 and 07/06/2006.

DETAILED ACTION

1. Claims 1-26 are pending as filed on 3 June 2005. Claims 2, 4-9 and 10-26 are withdrawn from consideration.

Election/Restrictions

2. Applicant's election of the invention of Group 1 drawn to aqueous sols and methods of making the same in the reply filed on 15 April 2008 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 15-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 15 April 2008.

3. Applicant's election of the species of $\text{SnO}_2/\text{ZrO}_2$ composite particles in the reply filed on 15 April 2008 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 2, 5, 7, 9, 11, 16 and 20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 15 April 2008.

4. Applicant's election of the species of the sol particle coating comprising an alkylamine-Sb₂O₅ compound in the reply filed on 15 April 2008 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 4-6, 11-14 and 19-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 15 April 2008.

5. Applicant's election of the species of the process with a hydrothermal treatment step in the reply filed on 15 April 2008 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 7, 8, 11 and 12 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 15 April 2008.

6. Applicant's election of the species of the process with an anion exchange step in the reply filed on 15 April 2008 is acknowledged. Because applicant did not distinctly

and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 7, 9, 11 and 13 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 15 April 2008.

Priority

7. Receipt is acknowledged of papers submitted under 35 USC 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

8. The information disclosure statements submitted on 3 June 2005, 2 September 2005, 23 February 2006 and 6 July 2006 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner has considered the information disclosure statements.

Specification

9. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thornton*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 1 and 3 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 2 of US Patent 6,626,987 (Suzuki '987 hereinafter).

Although the conflicting claims are not identical, they are not patentably distinct from each other because Suzuki '987 claims a stable modified metal oxide sol which contains 2 to 60 nm primary particles of a $\text{SnO}_2/\text{ZrO}_2$ composite coated with an alkylamine/ Sb_2O_5 compound having an amine to Sb_2O_5 molar ratio of from 0.02 to 4.00 and wherein the resulting particles have a size of from 2 to 100 nm. While Suzuki '987 does not claim a ratio of ZrO_2 to SnO_2 in the composite nuclei, the disclosure teaches

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this ratio to be from 0.02 to 1.0 (Column 1 Lines 54-62). See *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

11. Claims 1 and 3 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 3 of US Patent 7,208,229 (Suzuki '229 hereinafter).

Although the conflicting claims are not identical, they are not patentably distinct from each other because Suzuki '229 claims an optical element which comprises a colloidal particles of a modified metal oxide which contains 2 to 60 nm primary particles of a $\text{SnO}_2/\text{ZrO}_2$ composite coated with an alkylamine/ Sb_2O_5 compound having an amine to Sb_2O_5 molar ratio of from 0.02 to 4.00 and wherein the resulting particles have a size of from 2 to 100 nm. While Suzuki '229 does not claim a ratio of ZrO_2 to SnO_2 in the composite nuclei, the disclosure teaches this ratio to be from 0.02 to 1.0 (Column 1 Lines 54-62). See *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 USC 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 1 and 3 are rejected under 35 USC 102(b) as being anticipated by European Patent Application Publication EP 1077236 (Suzuki '236 hereinafter). Suzuki '236 was cited as an X-type reference on the European Search Report for European Patent Application EP 2003777209—which claims priority to the same Japanese Patent Application documents as the instant application. Suzuki '987 is the US equivalent to Suzuki '236 and all references herein are taken therefrom.

Suzuki '236 teaches a stable modified metal oxide sol which contains 2 to 60 nm primary particles of a $\text{SnO}_2/\text{ZrO}_2$ composite (Claim 1), wherein the ratio of ZrO_2 to SnO_2 in the is from 0.02 to 1.0 (Column 1 Lines 54-62), coated with an alkylamine/ Sb_2O_5 compound having an amine to Sb_2O_5 molar ratio of from 0.02 to 4.00 and wherein the resulting particles have a size of from 2 to 100 nm (Claims 1 and 2).

13. Claims 1 and 3 rejected under 35 USC 102(e) as being anticipated by Suzuki '229.

Suzuki '229 teaches an optical element which comprises a colloidal particles of a modified metal oxide which contains 2 to 60 nm primary particles of a $\text{SnO}_2/\text{ZrO}_2$ composite (claim 1), wherein the ratio of ZrO_2 to SnO_2 in the is from 0.02 to 1.0 (Column 1 Lines 54-62), coated with an alkylamine/ Sb_2O_5 compound having an amine to Sb_2O_5 molar ratio of from 0.02 to 4.00 and wherein the resulting particles have a size of from 2 to 100 nm (Claim 1).

The applied reference has a common inventor and assignee with the instant application. Based upon the earlier effective US filing date of the reference, it constitutes prior art under 35 USC 102(e). This rejection under 35 USC 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 USC 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 US 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 USC 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
14. This application currently names joint inventors. In considering patentability of the claims under 35 USC 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under

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37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 USC 103(c) and potential 35 USC 102(e), (f) or (g) prior art under 35 USC 103(a).

15. Claim 10 is rejected under 35 USC § 103(a) as being unpatentable over US Patent 5,460,738 (Watanabe hereinafter) in view of Suzuki '236.

Watanabe teaches a process for producing a sol comprising the steps: (a) a step of mixing an aqueous sol of stannic oxide containing colloidal particles of stannic oxide having a particle size of from 4 to 50 nm at a concentration of from 0.5 to 50 wt % as the oxide SnO_2 , and an aqueous solution containing an oxyzirconium salt at a concentration of from 0.5 to 50 wt % as ZrO_2 , in a weight ratio of from 0.02 to 1.0 as $\text{ZrO}_2/\text{SnO}_2$ derived therefrom; (b) a step of heating the mixed solution obtained in the step (a) at a temperature of from 60°C to 200°C. for from 0.1 to 50 hours—which meets the instant limitation of a hydrothermal treatment—to form an aqueous sol of stannic oxide-zirconium oxide composite having a particle size of from 4.5 to 60 nm; (c) a step of mixing the aqueous sol of stannic oxide-zirconium oxide composite obtained in the step (b) in an amount of 100 parts by weight, as the sum of ZrO_2 and SnO_2 contained therein, and a sol of tungstic oxide-stannic oxide composite having a particle size of from 2 to 7 nm and a WO_3/SnO_2 weight ratio of from 0.5 to 100, in an amount of from 2 to 100 parts by weight, as the sum of WO_3 and SnO_2 contained therein, at a temperature of from 0°C to 100°C. to form an aqueous sol of modified stannic oxide-

zirconium oxide composite having a particle size of from 4.5 to 60 nm; and (d) a step of contacting the aqueous sol of modified stannic oxide-zirconium oxide composite obtained in the step (c) to an anion exchanger to remove anions present in said sol. (Column 2 Line 64 – Column 3 Line 26)

Watanabe does not disclose expressly coating the $\text{SnO}_2/\text{ZrO}_2$ composite particles with an alkylamine/ Sb_2O_5 compound.

Suzuki '236 teaches a stable modified metal oxide sol which contains 2 to 60 nm primary particles of a $\text{SnO}_2/\text{ZrO}_2$ composite (Column 1 Lines 54-62 and Claim 1), wherein the ratio of ZrO_2 to SnO_2 in the is from 0.02 to 1.0 (Column 1 Lines 54-62), coated with an alkylamine/ Sb_2O_5 compound having an amine to Sb_2O_5 molar ratio of from 0.02 to 4.00 (Column 3 Lines 60-65 and Claim 1) and wherein the resulting particles have a size of from 2 to 100 nm (Claims 1 and 2).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to coat the particles in the process of Watanabe with the alkylamine/ Sb_2O_5 coating of Suzuki '236. The rationale to do so would have been the teaching of Suzuki '236 that to do so would result in a metal oxide sol coating with improved scratch resistance, transparency, adhesion, water resistance and weather resistance over particles coated with a WO_3/SnO_2 coating as disclosed by Watanabe and Japanese Patent Document JP-A-10-310429 (Suzuki '236 Column 3 Lines 16-23 and Column 1 Lines 54-62).

16. Claim 10 is rejected under 35 USC § 103(a) as being unpatentable over US Patent 5,460,738 (Watanabe hereinafter) in view of Suzuki '229.

Watanabe teaches a process for producing a sol comprising the steps: (a) a step of mixing an aqueous sol of stannic oxide containing colloidal particles of stannic oxide having a particle size of from 4 to 50 nm at a concentration of from 0.5 to 50 wt % as the oxide SnO_2 , and an aqueous solution containing an oxyzirconium salt at a concentration of from 0.5 to 50 wt % as ZrO_2 , in a weight ratio of from 0.02 to 1.0 as $\text{ZrO}_2/\text{SnO}_2$ derived therefrom; (b) a step of heating the mixed solution obtained in the step (a) at a temperature of from 60°C to 200°C. for from 0.1 to 50 hours—which meets the instant limitation of a hydrothermal treatment—to form an aqueous sol of stannic oxide-zirconium oxide composite having a particle size of from 4.5 to 60 nm; (c) a step of mixing the aqueous sol of stannic oxide-zirconium oxide composite obtained in the step (b) in an amount of 100 parts by weight, as the sum of ZrO_2 and SnO_2 contained therein, and a sol of tungstic oxide-stannic oxide composite having a particle size of from 2 to 7 nm and a WO_3/SnO_2 weight ratio of from 0.5 to 100, in an amount of from 2 to 100 parts by weight, as the sum of WO_3 and SnO_2 contained therein, at a temperature of from 0°C to 100°C. to form an aqueous sol of modified stannic oxide-zirconium oxide composite having a particle size of from 4.5 to 60 nm; and (d) a step of contacting the aqueous sol of modified stannic oxide-zirconium oxide composite obtained in the step (c) to an anion exchanger to remove anions present in said sol as detailed above.

Watanabe does not disclose expressly coating the $\text{SnO}_2/\text{ZrO}_2$ composite particles with an alkylamine/ Sb_2O_5 compound.

Suzuki '229 teaches a stable modified metal oxide sol which contains 2 to 60 nm primary particles of a $\text{SnO}_2/\text{ZrO}_2$ composite (Column 1 Lines 54-62 and Claim 1), wherein the ratio of ZrO_2 to SnO_2 in the is from 0.02 to 1.0 (Column 1 Lines 54-62), coated with an alkylamine/ Sb_2O_5 compound having an amine to Sb_2O_5 molar ratio of from 0.02 to 4.00 (Column 3 Lines 60-65 and Claim 1) and wherein the resulting particles have a size of from 2 to 100 nm (Claims 1 and 2).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to coat the particles in the process of Watanabe with the alkylamine/ Sb_2O_5 coating of Suzuki '229. The rationale to do so would have been the teaching of Suzuki '229 that to do so would result in a metal oxide sol coating with improved scratch resistance, transparency, adhesion, water resistance and weather resistance over particles coated with a WO_3/SnO_2 coating as disclosed by Watanabe and Japanese Patent Document JP-A-10-310429 (Suzuki '229 Column 3 Lines 16-23 and Column 1 Lines 54-62).

The applied reference Suzuki '229 has a common inventor and assignee with the instant application. Based upon the earlier effective US filing date of the reference, it constitutes prior art only under 35 USC 102(e). This rejection under 35 USC 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed

subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective US filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 USC 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 USC 103(c) as prior art in a rejection under 35 USC 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Conclusion

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Kugel whose telephone number is (571) 272-1460. The examiner can normally be reached 6:00 AM – 4:30 PM Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Timothy J. Kugel/
Patent Examiner, AU 1796